VIRGINIA WILDLIFE

AUGUST 1986 ONE DOLLAR

It's bad to think about it too much. Especially when you're getting ready to lug your boat out into the water for another hot August day of fishing that gets old about 11 o'clock when the bait starts to smell. But it's almost time, and I can't help it. It's almost time to load your shooting vest, one by one with number 8's and head out into the cornfields . . .

Opening Day, 1986. Soon, the pickups will be kicking up dust down the dirt road to some cut cornfield scouted out a couple weekends ago. And the men will have pulled out and unfolded the first flannel shirts of the season. It doesn't matter if it's too hot for them. It's opening day.

Right before noon, they'll be a mess of dirty trucks parked at the edge of the yellow field, with men and dogs jumping out, slamming doors, and grinning. The men have got new guns, new shells, new hunting vests. Everyone's talking guns, dogs, and doves. And how many shells they're going to waste on birds today. They'll pull out the Red Man, slap their hats against their thighs and scan the skies. Hot. Blue. No clouds. No wind, either.

Two buzzards soar overhead. A couple of meadowlarks dip and fly straight out. There's two birds sitting on a telephone wire overhead. A couple of men squint at them, wondering. "Nah, they ain't doves." Hats start to darken with sweat. Somebody's got new boots, and someone starts discussing the lack of cut dove fields. The hot weather. The drought. "Whose sorry dog is that?" "Why'd you bring him?" They shake their heads and grin. Everything's forgiven on opening day. Somebody brought his boy with him. His hat hides his ears. Can't see his face. "This your first hunt?" The kid nods and moves to his dad's knees. "Hope there's some doves. Yesterday, I saw a whole flock of them sitting in here about 4:00 p.m. eating. Hope they start flying earlier today." You know they won't though. Nobody's ever heard of doves flying as early as noon. But it doesn't matter. It's opening day.

Somebody starts walking along the left side of the field where there's pokeberry and sassafras bush and telephone wire running overhead. Even shading your eyes, you can't make him out in his camouflage or brown khaki jeans and shirt. You only see his gun dog now and then bounce out of the brush, wagging that setter flag of a tail. Somebody takes that stand by the old walnut tree in the middle of the field. The guy wised up this year. Got one of those seats that you fold out, one that doubles as a game and shell bag. Pretty nifty. It'd be nice to have one instead of crouching or leaning against some tree covered with honeysuckle, cradling a Browning and shifting now and then, getting stiff around the shoulders from looking up into the sky. You've brought too many shells of course, and you hide some of them. No reason for anyone to know *exactly* how many you missed. A small matter of pride, y'know. Chiggers are starting to bite. But, none of that matters. It's opening day, and it's nearing noon. The crickets are starting to buzz.

Opening day is the beginning. It's shaking the fever of summer and living again. I have a friend who doesn't understand why her husband needs to go out on opening day. "Why there's the whole rest of the season to hunt," she fumes. "Why does he have to go out on this *particular* day?"

He needs to go out because opening day simply makes the world sit right once again. He might not go dove hunting the whole rest of the season, but that doesn't matter. He'll probably shoot up three boxes of shells into the sky and not have enough doves for dinner, and the rest of his buddies might get skunked too. But that doesn't matter. It's opening day and that means a whole new hunting season is rolling out in front of him. Wide open. And he's got to be there at high noon on a cornfield to watch it all begin. To make sure it starts off grandly. It can't be missed.

So let the August heat come down. They'll soon be doves.

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August Issue

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Pigs are running wild in Back Bay National Wildlife Refuge and False Cape State Park, and wildlife biologists believe that a hunt is in order to keep the populations of this exotic animal in check. Find out more about our own Virginia razorbacks on page 16. Photo by Tim Wright.

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Back cover: Swamp along North Landing River, Virginia Beach; photo by Christopher A. Pague.

by Stephen C. Ausband
photos by Curtis Badger

Swamp Water Road

Except for the lines made by tall trees against the horizon, there are no straight lines in a swamp. Roots and limbs and vines twist and sprawl in ancient, serpentine confusion. The order in a swamp has nothing to do with geometry. Here lines stand out immediately as artificial—something imposed on an older world by our own upstart species. They are like the painted, neolithic handprints on the walls of caves in France. "Man was here," they say. "This is his mark."

I think that is why the old Dismal Swamp Canal, reaching from Deep Creek, Virginia, to South Mills, North Carolina, is so interesting. It is string-straight, a 23-mile-long ditch that cuts through the heart of what was once the largest and most forbidding wilderness in Virginia, an area so awe-inspiring that even that pragmatic surveyor William Byrd approached it with some trepidation and gave thanks when he could leave it behind.

To early Virginians, the ditch represented a conquest of sorts. Swamps in general—and this enormous quaking bog in particular—presented an annoying barrier to early planters' ideals of a flourishing, agrarian society. And

The Dismal Swamp Canal no longer holds any attraction for commercial traffic, but canoeists and fishermen appreciate it as an opening into wilderness.

swamps impeded travel and trade. About the only good thing one could say about a swamp was that it could be drained and the soil put to proper agricultural use. So the Great Dismal Swamp was gnawed at and carved on, and eventually diminished.

The canal is one of the early attempts at carving. Its purpose was not to drain the swamp, though; it was to provide a transportation route from the deep waters of the Chesapeake Bay to the broad sounds in eastern North Carolina. In the 18th century, Carolina towns like Edenton on the Albemarle Sound were important commercial centers. The overland route from eastern Virginia was treacherous at best, and ships big enough to run the Atlantic from Cape Charles to the nearest Carolina inlet were often too big to navigate inside the inlets or ply the shallow sounds. In the early and mid-1700's, various businessmen and planters, among them George Washington, planned the construction of a canal that would connect the Chesapeake Bay with the Pasquotank River and thence with the Albemarle Sound. In 1787 the project was chartered. The proposed route would cut through the heart of the great swamp. And cut through it, it did.

Unfortunately for trade, the cut was a little narrow and a little shallow right from the start. Very large vessels had difficulty staying in the slender channel, and a series of locks along the length of the canal made travel slow. By the time it was completed in 1805, the Dismal Swamp Canal was already inadequate, and the opening of an alternate water route to the east through Currituck Sound made the swamp route obsolete by 1859. There were attempts to improve the canal by dredging in 1828 and 1895, and in 1899 the number of locks was reduced from five to two, greatly augmenting the flow of traffic; but even this modernization did not

Dismal Swamp Canal
between
Norfolk, Va. and Albemarle Sound, N.C.

illustration by Cindie Brunner

help for long. As a trade route, the canal has always been an also-ran, even before changes in North Carolina inlets led to the decline of the busy little towns along the Albemarle. In 1913 the Albemarle and Chesapeake Canal became a part of the new Intracoastal Waterway, and the Dismal Swamp Canal lost most of its remaining commercial traffic. As a waterway for pleasure boaters and a fishing hole for shorebound cane-polers, however, the canal still holds its own.

Guide books for travelling yachtsmen describe the canal as "scenic," "wild," and "interesting." Several recommend that travellers interested in a slower-paced journey choose this alternative over the main route down the North Landing River. A few of them advise a sight-seeing cruise up the ditch leading to Lake Drummond, but only "for vessels drawing three feet or less." Since my outboard version of a yacht draws some two-and-a-half feet *less* than three feet, I have never had any problems negotiating the ditch. The last time I was there, I had lots of company, both on the ditch and on the main canal itself.

The canal parallels U.S. Highway 17 for its entire length, and adventurous motorists with canoes or car-topper boats sometimes simply pull off the road and drop their craft into the water. There is a large Game Commission boat ramp about eight miles south of Deep Creek for trailered boats. A campground a few miles to the north of the ramp has canoe and boat rentals. On any pleasant weekend afternoon, boats ranging in size from 10-foot car-toppers to 40-foot cruising yachts can be seen on the canal. Families picnic and fish at dozens of spots along the wooded banks. Canoes are everywhere; orange ones with white stencilling from the rental agencies, sleek aluminum ones, ones in camouflage colors, ones carrying pairs of serious, hard-core canoe campers, and ones carrying young couples with children out for an afternoon. Many of the boaters have come down from Norfolk or perhaps from farther away—Richmond or even northern Virginia—to birdwatch or fish or just enjoy being on the water and in the woods. It's easy to get the impression of isolation, even with Highway 17 a few dozen yards away. As soon as you are out of sight of other boaters, you are in a world of dark, silent water and deep, shadowed woods. You could be anywhere—on some tributary stream of the Orinoco or the Congo or anywhere else your imagination desires. A friend with whom I once explored a feeder ditch a few miles south in North Carolina, asked, "You think we'll find Bogart and Hepburn picking leeches off their legs around the next bend?" That's part of the charm, I think: that you can leave the metropolitan area and in minutes be in a world that looks as primitive and unchartered as anything any hermit might desire.

The U.S Fish and Wildlife Service administers the portion of the swamp that is a wildlife refuge, including 3,000-acre Lake Drummond. The area around the refuge is partly farmland, partly dense woods. Some of the woods are second-growth pines, but there are remnants of the old Atlantic white cedar forests on the refuge, and big stands of cypress all along the lake. Mammal species include black bear, white-tailed deer, bobcat, river otter, raccoon, and mink. It is a birdwatcher's paradise, with over 90 different varieties nesting in the swamp.

Detailed information on the Great Dismal Swamp National Wildlife Refuge may be obtained from the United States Department of the Interior, Fish and Wildlife Service. The author is grateful to the Public Affairs Office of the U.S. Army Corps of Engineers, Norfolk District, for providing information on the background and history of the canal.

Both the feeder ditch to Lake Drummond and the canal are maintained by the U.S. Army Corps of Engineers. Locks at either end of the canal and the dike at the head of the feeder ditch control water levels in the swamp (to prevent damaging drought) and prevent flooding. The locks allow access to deep-water vessels on the canal. The ditch, three miles long and three feet deep, ends at the dike, but a railway system lifts small boats up and over the six feet or so of earth bank to allow entry to Lake Drummond. Fishing for perch, crappie, bream, and catfish ranges from good to outstanding. There are bass, chain pickerel, and bowfin in the canal as well as smaller panfish, but dangling minnows in front of perch and crappie seems to be the most popular angling method. The fish are dark, stained like the tea-colored water by the tannic acid from the cypress and juniper and gum. I know it's just a whim on my part, but I've always thought these dark-stained fish looked healthier and more natural than their paler relatives caught in big impoundments. They taste the same.

The old Dismal Swamp Canal is a part of the state's history, an artifact that was dreamed about and planned in the Colonial period, and that has been in existence, in one form or another, since around 1800. It may not carry much commercial traffic these days, but it provides access to a world that reminds us of the past—our own past and one that is older than our own. For the recreational fisherman, the nature photographer, the birdwatcher, and the cruising boater who wants a change of pace as well as a change of scenery, the canal still has a great deal to offer.

Stephen C. Ausband is an English professor in Danville, and is a frequent contributor to Virginia Wildlife.

Fine Tuning For Summer Trout

There is still some fine trout fishing to be had in Virginia during the summer. You just need to think like a trout to find it.

story & photos by Harry Murray

Yes, it *is* possible to enjoy good trout fishing in Virginia all summer long. You can catch summer trout if you keep in mind the two factors that most influence trout in warm water.

The first thing to remember is that trout are cold-blooded creatures, which means their metabolism and manner of living is affected by water temperature. At very low water temperatures, they don't need much food, but as the water warms up so does their need for food—up to a point. Trout have specific oxygen requirements, and as a stream warms up in the summer, the oxygen carrying capacity of the water decreases, having a negative effect on the feeding habits of trout.

Thus, in 20 years of stalking our streams, I've found that those waters that stay below 70 degrees F. in the hottest part of the day during the hottest days of the year provide the best trout fishing. However, though some of our small mountain headwater streams fall into this category, many of them get very low in late summer. Still, there are two types of streams within Virginia that can provide cool water temperatures as well as adequate water flows.

The first of these is normally referred to as a tail-water stream. This is a fishery located below a large dam which is fed water from the bottom portion of the lake. It's hard to believe how cool the water is coming from the bottom of one of these impoundments.

The first time I ever fished a tail-water stream was an early morning trip in mid-June. I was wearing normal summer clothing and a lightweight pair of chest-high waders. My excitement in getting to fish this outstanding stream must have provided me with adequate insulation for the first half hour, but after that I simply became numb and had to quit fishing. You better believe that the next time I fished there I dressed differently for those early hours—even during the summer.

The second type of cool water summer stream that keeps up a good water flow is a limestone stream. The name is a giveaway. These are trout streams located in the valley floor that gain the major part of their water input from a single spring or a series of spring seepages.

During the hottest part of the summer, both types of streams will be at their best closest to their cold water

inputs. The further you go downstream, the warmer the water becomes. The length of the worthwhile water will be primarily determined by the volume of cold water feeding into the stream. A large cold water input may provide 10 miles of great fishing water, whereas a small flow may become too warm for good summer fishing within a mile or two. Naturally, any inflowing of a warm water surface stream will have a diluting effect on good trout water.

The second factor influencing good trout fishing during the summer is the natural food available. The thick hatches of aquatic may flies and caddis flies are pretty well over, and the trout must feed on what is available. Fortunately, for the trout, land-born insects plop into streams all summer long.

Starting in early summer, you will find large concentrations of terrestrials along many of our trout streams. By carefully stalking these streams, you can often spot trout rising to naturals as they drift helplessly on the surface. Keep in mind that these insects are coming into the stream from the bank or overhanging limbs, so this is the area to check closely for feeding trout. Many nice fish will move in close to the banks to take advantage of these goodies.

Be extremely observant of wind and shade when considering just where the trout will locate to feed on terrestrial insects. Even a slight crossing breeze can cause enough ants or other insects to find their way into the stream to prompt trout to locate close to a particular bank.

All other things being equal, trout, especially browns, will seek out shade during the summer. Biologists use the term "negative phototropism" to describe this behavior—which to us means they just don't like bright light. This shade can be provided by tree limbs, shrubs, overhanging banks or the downstream extension of aquatic grassbeds. Any time one of these features is located close to a moderate current, you should examine that area closely for a good fish. If there is some slight instream structure to slightly break the force of the current, you can almost be sure there is a good trout close by.

Watch the surface closely for several minutes before making a presentation, because the easiest trout to take is one you have pinpointed. If no rise comes after several minutes, make every effort to try to spot the fish. By utilizing polarized sunglasses and maneuvering to put the sun on your back, you have a good chance of seeing him—unless he is holding real deep in the water.

If all this fails to tell you exactly where he is, go ahead and make your presentation anyway. Methodically covering these areas will usually provide good catches.

There are a broad variety of terrestrial insects crawling around our streams all summer. In the early part of the summer, there will be thick concentrations of both black and cinnamon ants along our streams. Trout love to feed

Brown trout inspects a cricket imitation before sucking it underwater.

on ants and will take them in great numbers any time they are available. If, as you are stalking one of these streams, you spot a consistent surface feeder working tight to the bank, and you see no flies in the air, there is an excellent chance he is an ant eater. I have seen some of these fish delicately suck under three or four naturals per minute for long periods of time. It's not that they wouldn't feed on other terrestrials as voraciously, it's just that only under unusual conditions would there be this great a concentration of other land born insects on the water.

I wish I could tell you that simply locating one of these trout working on ants is 90 percent of the game required to take him, but this isn't the case. In one of the streams I frequent there were three such trout within about 20 feet of the stream under one tree. These fish fed and fed and fed all summer long, and although I gave them a good going over every time I was on the stream, I failed to land one all summer.

As the summer progresses, the beetle becomes important. Many anglers assume that when we talk about beetles on a trout stream, we mean Japanese beetles. True, these insects provide an excellent food source for our fish, but there are scores of other beetle-type insects which they will take just as readily.

The important thing to check for when selecting a dry beetle pattern is opaqueness. The body of a natural doesn't allow light from above to filter through them and you should try to match this with your imitations. The Crowe beetle accomplishes this quite well, for example, and is an extremely effective fly.

This pattern, as well as the black and cinnamon ants, is good from size 12 down to size 22. Unfortunately, the smaller sizes will best match the naturals in many cases, and you'll have to go in this direction if you expect to outsmart the fish. The technique for fishing these is to use a 9 or 10 foot leader tapered down to the finest tippet allowing you to accurately turn over the fly. On the smallest sizes, this means using at least a 6x tippet.

Approach the observed trout or anticipated feeding station from below—as cautiously as possible. If you are on the bank or in shallow water, this means going in on your hands and knees, and crawling into casting position. If you are wading, it means moving very slowly and quietly to prevent sending out waves or bottom noise vibrations to alarm the trout.

Carefully cast your fly to a point about two or three feet upstream of your trout on a slightly slack line. If no rise comes from the anticipated feeding station, allow your fly to drift on well below the target before picking it up. After all, you may have misread the setup and your trout may actually have

been holding several feet below where you thought he was; or there could always be a second trout below the first one. In any case, it is important to allow your fly to float clear of the best water before making the pickup to prevent spooking the trout.

Cautiously work your way up the stream in this way, covering all of these feeding stations very carefully, just as if you were sure each held a good trout. You will be amazed how many trout this approach will produce.

The next insect worthy of consideration for summer trouting is the cricket. If I had to choose one fly for all of my surface trout fishing during the summer, this would be it.

Its black color makes it highly visible to both the trout and the angler in discolored water. This may sound backward, but if you try it, you'll see what I mean. One stream I fish often during the summer has a small feeder coming into it which seems to produce a muddy runoff with the slightest rain. I've gotten to the point that I'll head to this area with the first hint of rain and knot on a big cricket to cover that soupy water. The slightly discolored water seems to dispel a trout's normal caution. Naturally, that extra run-off will bring a few extra bugs to them, and they'll usually climb all over a well-presented cricket.

Don't feel there have to be lots of natural crickets on the water before using this pattern, though. You will seldom see this, and besides, I feel sure this is one of those flies trout take for a broad variety of insects. In addition, it is an outstanding "fish finder." Often, a good fish will pull out from under a bank and examine the fly closely before refusing it to return to his holding spot. This fish is definitely catchable. By either dropping down to another cricket half the size of the one he refused, or by running a small black ant over him, you will usually take the fish.

I use this tie in sizes from 16 up to a size 10. Don't think that you have to use the largest sizes to catch the largest trout. From day to day, their preferences seem to change. I like to have complete size selections to meet their fickleness.

As summer progresses, the grasshopper comes into its own. This has long been recognized as an outstanding trout taker, but in order to make the most of this fishing, there are a few fine points to understand.

The first hoppers to make an appearance are quite small and a size 16 imitation will match them. Even with this small pattern, however, I find I consistently make my best catches if the fly is sparsely tied. Ed Shenk's Letort hopper is an excellent example of this concept. By the latter part of the summer, many of the natural hoppers are 1½-inches long, and are thus well-matched with a size 10 imitation. Both Ed's and Dave's hoppers are quite productive in this larger size.

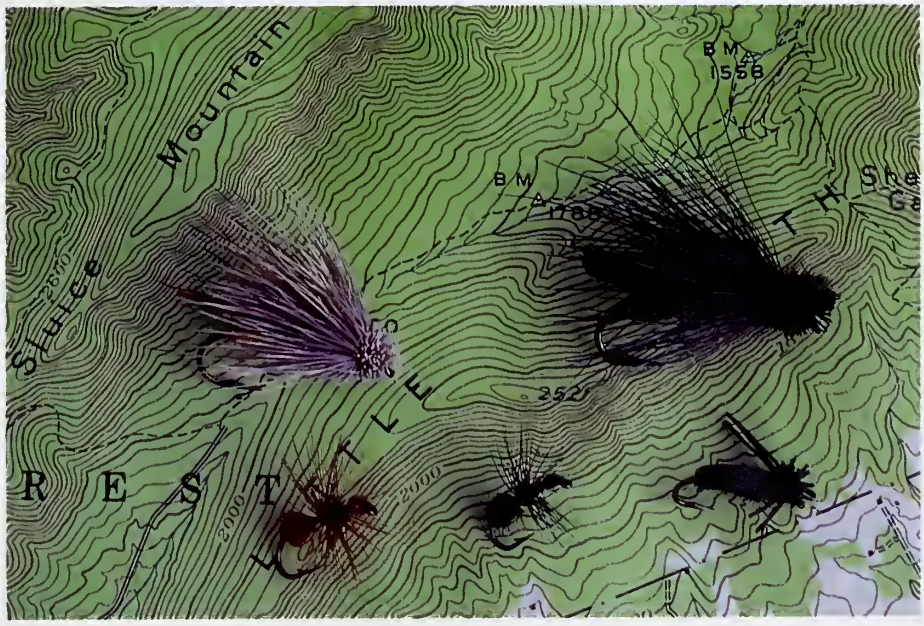
Dry fly anglers normally like to see their presentations riding calmly along the stream surface in what we call a "drag free drift." That is, they like to see a fly being carried along by the current just as if it were not attached to a leader at all. This is the way many natural insects are presented to the trout, and is a valid concept as it applies to many aquatic insects. Unfortunately for the angler caught up in following orthodox procedures, the grasshoppers act entirely differently.

The instant they find themselves in contact with the water, they begin kicking in an attempt to reach dry land. The trout have come to recognize this as a standard escape procedure used by all hoppers. Thus, an actively fished dry hopper will often bring some very forceful strikes from trout that will pay absolutely no attention to the same fly fished in a drag free drift.

Accuracy in fly placement and line control on the water are the two most important aspects of fishing land-born insects. I find that a 9 foot fly rod which handles a number 4 line helps achieve this. Fly reels for this type fishing should be as light as possible and have the capacity for a very light drag control. How light? You'll find out when that 20-inch brown sucks under your size 20 ant on a 6x tippet.

Most anglers prefer compound tapered knotted leaders about 9 feet long for this fishing. They should be tapered down to 3x for the largest hoppers, and some should be as fine as 7x for the smallest ants and beetles.

If you are one of those who felt trout fishing was coming to a close in Virginia with the end of our aquatic mayfly hatches in late spring, try searching out some of our steams with land-born insects this summer. You'll be in for a surprise. □



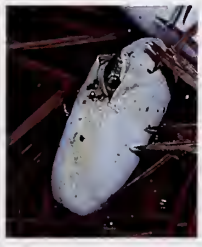
The essential flies for successful summer trout fishing: Top left to right: Shenk's hopper, Shenk's cricket; bottom left to right: cinnamon ant, black ant, Crowe beetle.

Harry Murray is a frequent contributor, and among his other pursuits, teaches fishing and fly tying in Edinburg, Virginia.

Hidden Motion

A photographic essay on the rough green snake.

Text by Christopher A. Pague



Green snakes are not something you often find. They are usually stumbled upon. This one was no exception. Just another few yards and I would be out of the woods, but that tangle of briers required a time-out. Unpleasant thoughts about vines and briers crossed my mind as I stared at the green wall.

Suddenly, like those visual puzzles in magazines where an image emerges from a formless pattern, I saw a small but distinct eye. Around that eye I made out a slender green face. With the color revealed, the rough green snake *(Opheodrys aestivus)* stood out as if it were on a pedestal. It was vinelike, resting on a bright green Smilax branch with its head extending upward.

This was camouflage at its highest level. Everyone knows animals use color and pattern to blend into their background; like chuck-will's-widows on the forest floor, American bitterns in the marsh, a spotted fawn on a sun-splashed forest floor, gray treefrogs on lichen-covered tree branches. All match the background and hold *perfectly still.*

But what if the background moves?

The habitat of the rough green snake moves. Most of its time is spent on the edge of thickets, ponds, waterways and fence rows. There, even the slightest summer breezes cause vine tendrils and willow branches to waver. And that snake I saw moved. Its head swayed back and forth. And not all the time—only when the breeze buffeted the greenery where it was perched. In perfect time, it rocked back and forth in imitation of a wind-blown twig.

Of course, to stay still while everything around is moving would make no sense. But it wasn't until I observed the snakes from hatching to adults that I realized this behavior is not something that they learn.

After watching green snakes struggle from their eggs, I put the still-wet hatchlings in an outside terrarium filled with vines. Jerkily, they moved along the vines until they reached a branch end. Then, the erect head and forebody began loosely swaying with a breeze. Adaptation gets the credit, they're born with it.

To survive in such an open habitat requires the best of camouflage. Much of the time green snakes seem to be simply basking in the sun, controlling their temperatures as reptiles must. But perhaps they are hidden from their prey also, watching with excellent eyes for food favorites like grasshoppers, caterpillars and spiders. Prey is stalked. They inch forward like a string pulled by an invisible force. When within range, a quick thrust and nab with the mouth ends the hunt.

Left: Rough green snake (opheodrys aestivus) *with newly-laid eggs. Above: Hatching out—the birth of a rough green snake; photos by Kerry T. Givens.*

Green snakes themselves probably make a good meal. The exposed edges of shrubs test their ability to remain unseen. After all, to be eaten is the final mistake. However, if the binocular vision of humans has difficulty finding them, it must require *some* effort for a predator to find one on a greenbrier branch.

Well, I caught that green snake before fighting through the briers. Holding it while admiring the spring green body and its prehensile tail tying a knot known to snakes on my fingers, I couldn't think of a single way it could be improved on. Placing it on its vine-brothers, it glided into them until it was hard to fix my eyes on it. I shut my eyes for a few seconds. When I reopened them, it was just as I thought. The snake was gone. Not really of course. It just looked all the world like a vine tip swaying in the breeze. □

Christopher A. Pague is a doctoral student in ecological sciences at Old Dominion University.

Camouflage of the highest order;
photo by Dorothy L. Mitchell.

Hatching: photo by Kerry T. Givens.

Hidden motion among the leaves; photo by Charles W. Schwartz.

Virginia's Bay of Pigs

Back Bay National Wildlife Refuge and False Cape State Park are home to a colony of exotic runaways—Virginia's feral pigs.

by Bob Duncan and Don Schwab

False Cape State Park and Back Bay National Wildlife Refuge bring alot of thoughts to mind. Beaches, pines and live oaks, deer and ducks, and cottonmouths are what most would expect, but unless you are a regular visitor to the Back Bay area, you wouldn't think of seeing a wild pig.

And neither should you. Even though country ham has long been a tradition in the Old Dominion, hogs are not native to the Back Bay region, Virginia or even the U.S. The first wild hogs in the U.S. originated from domestic swine introduced to the southern coast of Florida by the Spanish in the early 16th century. Feral hog populations became so well established that the Indians began harvesting pigs and selling pork in the 16th and 17th centuries. Later, as agriculture spread across the southeast and free-range practices were in effect, hogs became common in the wild.

Virginia's feral pigs, which originally belonged to some of the early residents of False Cape, are like wild pigs in other coastal areas of the southeastern United States. They are descendants of domestic stock that were released, abandoned or escaped and which have reverted to a wild state. Throughout the south these animals are referred to as wild hogs, "piney rooters" and razorbacks. Feral swine populations are now found in every southeastern state from Texas east to Florida and north to Virginia.

In Virginia, feral hogs are confined to False Cape State Park and Back Bay National Wildlife Refuge (NWR), areas composed of narrow barrier beach that separates a freshwater bay from the Atlantic Ocean. Back Bay proper is a shallow, open water area of 25,000 acres surrounded by marshland where

Right and overleaf: Feral hogs at Back Bay NWR and False Cape State Park; photos by Tim Wright.

big cordgrass, black needlerush, and cattails abound. It was in these marshes that the early residents of the area allowed their hogs to forage.

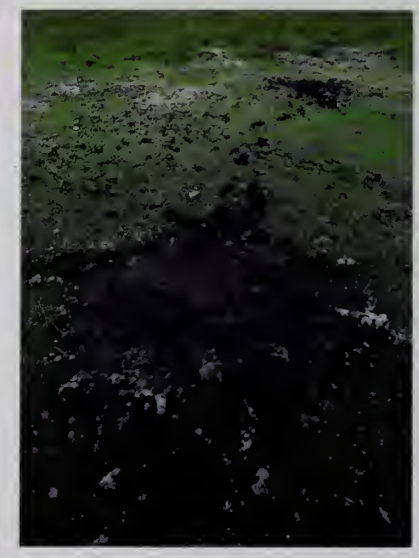
Submerged vegetation within the bay then was very abundant, but in recent times has declined to the point where it is nearly non-existent. Even though this loss of aquatic plants has affected both fish and wintering waterfowl numbers, the well-adapted hogs have actually flourished.

Much of their resiliency is due to the diversity of vegetation types on the Back Bay barrier beach. For example, the northern portion of False Cape State Park, known as Barbour's Hill, and most of the Back Bay NWR are managed as freshwater impoundments, principally for wintering waterfowl. These impoundments serve as nesting and feeding areas for a wide array of wildlife, including the wild pigs. The areas adjacent to the open beach, known as the Inner Dunes, are predominantly rolling sand hills, with live oak, bayberry, wax myrtle and black cherry. The central portions of the park are forested with pine and live oak and the understory is predominantly highbush blueberry, cat briar and poison ivy.

Food habit studies of coastal area hog populations in other states have found that herbaceous material, primarily grasses, comprise the major portion of the hogs' diet in the spring. Roots are utilized year-round but mainly are eaten in the spring and summer. Acorn mast, when available, provides most of the fall and winter diet. Mushrooms and other fungi, earthworms, small vertebrates and invertebrates and carrion also are consumed by hogs. It seems that a hog's hooves never go where his snout has not already been!

The feeding habits of Back Bay's hogs can best be described as omnivorous and opportunistic. Though preferring to be vegetarians, our hogs have been observed eating dead fish left on beaches by commercial fishermen, and hibernating frogs in large numbers.

The favorite food of Back Bay hogs is live oak acorns, the availability of which is the key to the seasonal movements of the hogs during the year. In November through late February, when acorn mast is usually available, hogs are concentrated on the upland areas and beaches. In April and May, hogs usually return in large numbers to the freshwater marshes where they remain until late summer and early fall. Because of this and the hog's habit of late evening and nocturnal activity, visitors to the refuge and the park are more likely to observe some form of hog sign (tracks, rooting or wallowing) as opposed to encountering hogs in any numbers.



Feral hog tracks and rooting sign; photo by Lynda L. Richardson.

For more information about fall deer and hog hunting on Back Bay NWR, write:

Back Bay National Wildlife Refuge
4005 Sandpiper Road
Virginia Beach, VA 23456

For information on the fall False Cape State Park deer and hog hunt, write:
Commission of Game and
Inland Fisheries
Pocohontas-Trojan WMA
Box 7159
Virginia Beach, VA 23457

Wild hogs, however, do not pose a serious threat to visitors of the refuge or the state park. Feral hogs rely on their acute sense of smell and hearing as opposed to their vision to avoid confrontations. Their reaction to intrusion more often than not is one of fright and flight from the area. Only cornered or injured animals, or sows with young might be threatening—but even in these situations most pigs will attempt to flee.

Feral hogs are usually wary and actually may be harder to approach than wild deer. This is not to say that feral hogs don't look imposing, especially a boar weighing several hundred pounds. They seem to have a look that says "You owe me money!"

The rooting behavior of feral hogs, however, raises several questions regarding potential impacts on vegetation, and other wildlife. Damage to forest regeneration and crop depredation, which is a problem in other states, is not a problem in the Back Bay area. But, Ralph Keel, a biologist with the U.S. Fish & Wildlife Service, reports that hogs have interfered with trapping and banding operations for waterfowl by eating corn placed as bait there. He has also observed substantial rooting in areas of three square and spike rushes.

Concerns over the impact of wild hogs on ground nesting birds has been expressed in other states where feral swine occur; however, research into this question has produced conflicting and as yet inconclusive results. For example, a study of vegetation damage by feral hogs on a Mississippi coastal island concluded that flora on one island with hogs did not differ significantly from an island without hogs. While individual plants may be detrimentally affected, their regrowth was quick and the effect was short term. Concerns about hogs affecting the stability of sand dunes

were also reported to be unfounded in the same study.

The question of hog competition with native wildlife species may be the more serious concern. This is a major problem on many of our national wildlife refuges, and could be more of a problem on the Back Bay National Wildlife Refuge and the state park if hog numbers are not controlled. Competition for food depends, in large part, on the availability of adequate food sources and the abundance of mast. Both deer and feral hogs have the ability to exceed the carrying capacity of their range or habitat. Feral hogs may also pose a threat to nesting loggerhead sea turtles, a federally endangered species. However, since the concern centers on nest disturbance and destruction of turtle eggs, pigs may not be as much of a problem as human and vehicular traffic in the area.

It's generally accepted that all domestic hogs had their origin from one or more populations of Asiatic wild boar. Back Bay pigs are smaller than domestic pigs and are comparable in size to their wild boar ancestors. Feral hogs in Virginia are thinner, appearing more streamlined in body shape, with longer and sharper tusks and coarser coats than tame hogs. But, body size and weight of feral hogs are highly variable, depending on the genetic makup of the herd and the local environment. Data from ten Back Bay hogs showed an average whole weight of 110 pounds with a range from 74.5 to 198 pounds. Though this is a lighter weight than some reported for feral hogs, it is comparable to information on other coastal swine.

The male hog is usually larger than the female, and both sexes usually increase in size through the second or third year of life. While Back Bay pigs closely resemble their tame counterparts, they have lost some characteristics of domestic pigs. Feral hogs at False Cape have straight tails and are usually jet black in coloration. Otto Halstead, Biologist Aide with the Game Division, reports that hogs on the area have demonstrated less and less domestic hog coloration over the years. Occasionally a hog will have some white on its legs or hooves, but only rarely has anyone seen a feral hog with a Hampshire type shoulder blaze or band.

Rooting damage by feral pigs at Back Bay; photo by Lynda L. Richardson.

Usually, the only glimpse you'll get of a feral pig at Back Bay is of its hind parts; photo by Tim Wright.

Examinations of feral hogs at Back Bay, by both Game Commission biologists and personnel from the Southeastern Cooperative Wildife Disease Study (a cooperating wildlife health organization associated with the University of Georgia College of Veterinary Medicine) have revealed that Back Bay hogs are generally in good condition, and that diseases of significance to wildlife, domestic livestock or man are not present. Back Bay hogs are, however, host to several species of internal parasites including lungworms, kidney, stomach and intestinal worm. But the level of these parasites is not great and all are of the type commonly found in feral pigs of North America. The most common parasites are ticks which have been found in exceptional numbers on individual animals checked in the spring of the year.

Nevertheless, the hog is considered an exotic species on the Back Bay refuge and resource management plans include the need to control if not eliminate the hog from the federal refuge. However, according to estimated hog numbers for both the refuge and the False Cape Park, as much as 75 to 80 percent of the feral hog population may occur on the state park lands. It's estimated that the total hog population may number between 400-500 for both areas. Since the impact of this species on the vegetation and other species of wildlife is a function of hog density, the key to the feral hog situation lies in the hunting program. Quota deer hunting is already permitted on state park lands at False Cape, and the National Wildlife Refuge is considering a limited season on deer for the first time this fall. Both the Game Commission and the Fish and Wildlife Service plan to allow the taking of feral hogs in conjunction with authorized deer hunts on these areas this year in an effort to reduce the hog population.

Thus, we must live with hogs and manage them as a permanent, if controversial, introduction to our coastal ecosystem. □

Bob Duncan is assistant chief of the Commission's Game Division and Don Schwab is a district game biologist.

by Christopher A. Pague

Maligned Sanctuaries

Swamps have a bad name—that they don't deserve.

"The Land between James River and Roanoke River is for the most parts Low Suncken Swampy Land not well passable but with great difficulty. And therein harbours Tygers Bears and other Devouringe Creatures."

Augustin Herrman (1673) Map of Virginia and Maryland

I read the early naturalists' accounts of the great southern swamps. I saw the films of ornithologist A.A. Allen standing next to the truck-sized boles of bald cypress trees searching for the last of the Ivory-billed woodpeckers. I wanted to see them for myself.

Planning my first encounter with a trailless expanse of swamp in Virginia Beach conjured up romantic images and horror stories of bugs, snakes, quicksand and who knows what else. I remember thinking before putting my tennis-shoed foot into the swamp muck that all my college courses and outdoor experience had not prepared me for this. I entered the unknown.

Sadly, the forests of massive cypress were not there. The bugs and the snakes were. Yet even then, and in many trips since, swamps have yielded some of Virginia's best kept wild secrets.

A wooded area which is usually flooded defines a swamp. Many areas such as these are found in eastern Virginia. But to most people, the images of the great swamps of the southern United States are derived from B movies such as *Swamp Creatures.* It is true that the most northern of the great southern swamps lie in southeast Virginia. The best known one is, of course, the Great Dismal Swamp.

Many other swamps exist, however, which are small but important wetlands, often surrounding the floodplain of a small sluggish stream or river. There are then two kinds of swamps: riverine and non-riverine, both united by water. This essential link illustrates an important feature—swamps are water traps or temporary reservoirs.

Normal rainfall makes its way to the sea. Broad expanses of swamp forest slow the water movement down and serve as reservoirs for dissolved nutrients. In riverine swamps, the awesome forces of floodwaters are moderated. In lowland swamps, the water is retained longer, maintaining higher water tables and allowing more water to evaporate.

Because slow water movement makes dissolved nutrients available for long periods of time, there is a high production of plant material in swamps, especially in riverine swamps where nutrients are transported in regularly. In non-riverine swamps, although nutrients are brought in and leaf litter peppers the swamp, the tannins leached from the leaves turn the water acid and typically a dark tea color. Such acid waters prevent the decomposition of

organic matter, leaving the incoming nutrients unavailable to life in the swamp, which has led some to say that swamps are relatively sterile.

I found however, that quite the contrary is true. Swamps teem with life suited to this wet environment. Cypress and water tupelo trees are excellent examples. Not only do their broad bases provide support for trees that reach 100-150 feet in height, but the efficiency of the shape was illustrated to me in several trips deep into the swamps after Hurricane Gloria buffetted Virginia's coast in the fall of 1985. Numerous trees were blown down, but very few of them were cypress or water tupelo. Instead, the red maples, willows and sweet gums succumbed. Perhaps this accentuates the natural succession of swamp regrowth to stands of cypress and tupelo.

Blow-downs, however, provide openings in the forest canopy for sunlight. The summer canopy of a mature cypress-gum swamp may be thick, allowing only sparse undergrowth. Therefore, small openings allow rapid growth of emergent vegetation such as arum, pickerelweed and lizard tail. Occasional patches of fragrant water lilies brighten the often dark swamp interior. Stumps and the turned-on-their-side root masses of blow-downs are sometimes decked with the pink flowers of the briery swamp rose.

Except for bald cypress and water tupelo, however, no other plant conjures up swamp images like Spanish moss. This rootless air plant, an epiphyte, hangs on branches of vegetation above the swamp, gathering moisture and nutrients from the air, rain and drippings on the host tree. The beard-like suspensions of moss are at the northern limit of its range in southeast Virginia swamps. It is only common in the interdunal swamps of Seashore State Park, but I have found small "colonies" existing in the interior of swamps along the Northwest and North Landing Rivers.

The moist community and high humidity provides near perfect medium for lichens, mosses and ferns. Each fallen tree with a dry side is soon carpeted with a thick rug of soft green. Lichens thrive on tree trunks, and the feather-like leaves of ferns often emerge from mats of moss, old stumps, or with Resurrection fern, directly off the branches and trunks of living trees.

These same conditions also give rise to enormous numbers of fungi. The spore-bearing fruit of the fungus, the mushrooms, bedeck the swamp in spring and fall with a display of purple, orange, red, yellow, white and brown. It is sometimes difficult to associate the delicate mushroom with the plant's all-important function of breaking down dead organic matter,—all-important in nutrient-poor acidic swamps.

The plants of swamps must be able either to adapt to regular or permanent

Left: Butterfly in the Dismal Swamp. Above: Canoeing in the Dismal Swamp; photos by Curtis Badger.

inundation or to avoid it by living a life above the water. The animals must do likewise.

William Byrd reported in 1728 that the Dismal Swamp was unfit for animal life. However, sunrise and sunset produce tiny drones of millions of flying insects. The swamp is full of life. A spotlight shone into a swamp forest at night reveals the green eyes of spiders, strutting across the water surface, climbing trees, in the few shrubs, and suspended from countless webs.

Below the water and mud dwell another specialized group of animals. In the darkness of swamp water, sight is often useless. Thus catfishes, swampfishes (close relatives of the blind cavefishes) and large salamanders with small legs, amphiumas and sirens probe for food by touch and chemical detection. Even then, some surface and sight hunters abound. The sound of popping fliers (a swamp sunfish) or the rushing splash of a pickerel are common sounds. More frightening is the sometimes huge swirl and splash of bowfin (locally called grinnel), the largest native swamp fish.

Leopard frogs, green frogs, bullfrogs and carpenter frogs have found their own Manhattan in a swamp. These species probably provide the main course for most carnivorous predators. I have found frogs or their remains in the stomachs of snapping turtles, several snakes and in red-shouldered hawk and screech owl nests. Raccoons certainly prey heavily on them and even tadpoles are eaten by red-bellied watersnakes. Neither are frogs restricted to the water-level living. Gray tree frogs often call far up in the canopy or hollowly from a knot hole.

Noticeably absent or rare from swamp interiors are the ground dwellers. The ovenbirds, box turtles, moles and rabbits are hard to find. Though they may occur on higher elevation sites within the swamp, the inundated portions of the swamps are unsuitable, or at best, serve as temporary refuges and corridors to other upland sites.

It is the arboreal species that in a mature swamp lives in a virtual paradise. Warblers and flycatchers feed in the crowns 80 feet or more above the surface. While squirrel hunting deep within the swamp, once as many as 18 squirrels came into view and I was too amazed to shoot. Raccoon sign is abundant and their greasy clawed tree marks are usually on a large hollowed old cypress or tupelo. Sitting still leaning against a cypress knee for a tree base, I've watched screaming red-shouldered hawks chase birds through the swamp. Pileated woodpeckers cut large chunks of wood that drop near me and chuck, startled, when I have to slap a mosquito on my face.

A bit more unnerving at night, an immense number of swamp animals abound, including mosquitoes. Frogs, raccoons, watersnakes and barred owls

Cottonmouths (Agkistrodon piscivorus) *apparently find swamps an excellent habitat, as they can often be quite abundant in them, feeding on frogs and swamp fishes; photo by Christopher Pague.*

all hunt their prey, seek their mates, or are hunted at night. Certainly the surveying crew of William Byrd was not an assembly of astute observers.

My early swamp views were always tainted with snake stories. "Water moccasins" suspended from tree branches would drop on you as you passed by, delivering a merciless death. These fears were real, but never realized. Certainly red-bellied watersnakes and cottonmouths are sometimes abundant, especially in small openings in swamps south of James City County, but only on swamp and river edges do watersnakes climb into tree branches. Of the hundreds I have encountered, I have never seen a cottonmouth in a tree branch. In the interior of southeastern Virginia's swamps, the abundance of cottonmouths can be astounding, however, especially in late summer when they gather for the winter. It is not uncommon to see four or five on a mass of overturned tree roots in the North Landing River Swamp. In the Northwest River Swamp, a friend and I unknowingly waded too close to approximately 25 cottonmouths on one large tree base. We *and* the snakes were surprised. But, appropriate caution has always made my trips safe.

Swamps also serve as natural sanctuaries for many disappearing species. In Virginia, the black bear survives outside of the mountains only in southeastern swamps. Red-shouldered hawks, reportedly disappearing in many areas are abundant in Virginia's swamps. And the canebrake (or coastal plain form of the timber) rattlesnake persists only in the pockets of large swamps and swamp edges. Such refuges serve as self-stocking mechanisms for other nearby swamps and upland areas that have been altered, but may someday return to suitable habitat for swamp creatures.

But just as the negative image of swamps has provided them with some protection, it has, since first surveys, provided reasons to alter the land to a more "useful" form.

William Byrd called for a draining of the Dismal Swamp in his 1728 report. George Washington and friends began draining the Dismal Swamp for timber and agricultural purposes. Even one of our greatest conservationists, Theodore Roosevelt, stated in 1912, "There can be no greater issue than that of conservation in this country . . . so it should go into the work of helping to reclaim the swamplands of the south."

Even the conservation-minded world of the 1980's seeks in some corners to continue draining swamplands. Campbell and Hughes claim that there is a necessity of draining wetlands to increase timber yields.

Timber management has altered, perhaps permanently, the state of some of Virginia's finest swampland, most notably the Great Dismal Swamp. By ditching and directionally changing the surface flow of water, the swamp has

Southern leopard frog, Rana utricularia *is just one of the many amphibians dwelling in Virginia's swamps; photo by Christopher A. Pague.*

probably become drier. This has increased the ability of the red maple to survive, hence preventing a natural succession to bald cypress and water tupelo. The effects on animal life can at present only be speculated on.

Other types of draining have observable negative impacts. As southeastern Virginia continues to urbanize, it needs to increase the flow rate of runoff from low-lying areas. Channelizing the fingers of large swamps hastens this flow. This causes increased siltation, smothering many plant and animal species. In addition, as water levels are lowered, land is pulled out from inundation.

Thus, less water tolerant species are beginning to invade swamps such as Gum Swamp and Pungo Swamp, which have been channelized, since fewer of the typical swamp animals can survive the decrease in water. An overall decrease in animal biomass is observed in close-to-land areas. Such practices continue today—slowly, but steadily diminishing our swamplands.

Virginia's swamplands do provide some of our most important timberlands and wildlife habitat and they should continue to do so. I found in those swamps a natural system worth suffering some biting insects, wet pants and cold feet. Careful management that maintains water flow patterns and water quality will allow swamp forests to regenerate.

But I didn't find those giant cypress forests, nor have I since. They're gone from Virginia. And with the community went the Ivory-billed woodpecker and probably other less noticable animals. But dynamic natural systems allow old climax forests and wilderness to develop as they always have. Perhaps wise planning would suggest that some of the most natural areas of swamp be set aside and allowed to grow very old. Old enough to teach us what we can't learn today. We can't bring back the Ivory bill, but maybe our children, or theirs, will be able to stand beside some truck-sized boles of cypress someday—right here in Virginia.

"God has cared for these trees, saved them from drought, disease . . . but he cannot save them from fools."—John Muir □

Virginia's Dismal Swamp; photo by Curtis Badger.

Catching The Uncatchables of Summer

It takes more than bait and wishful thinking to catch those big summer bass—you need to know what the fish are doing.

Text and photos
by Bruce Ingram

It's summertime and the living may be easy—but the fishing almost certainly isn't. The lake is crowded, the water is warm, and the bassing is slow.

Sound familiar? Every summer, thousands of us make annual pilgrimages to one or more of the Old Dominion's impoundments. On these journeys, also called vacations, we're supposed to put bucketmouths into the live well. That's the way fishing should be, by gosh. Things often don't work out, however.

Jim Abers, a full-time guide on Buggs Island and Gaston, knows how to catch bass during the difficult July-August period. He has to, since his income depends on his being a successful angler. The Boydton resident believes many fishermen fail because they don't understand largemouth bass behavior.

"Bass are mean, aggressive creatures," says Abers. "If they grew to a size that was in proportion to their aggressiveness, no human being would be safe in the water.

"A while back I had three bass in an aquarium. They were 6, 6½, and 7 inches in length. The 6½ incher killed the other two. It just kept ramming and biting them.

"I then put a dozen 1½ inch crappie minnows into the aquarium. That surviving bass ate half the minnows, then killed the rest. It's the same way out in a lake."

Abers feels that bass are most aggressive when the water temperature is 80 degrees F. In the summer, a reading in that range is most likely to be found at dawn. The guide uses what he knows of bass behavior and metabolism to plan his fishing.

"On a typical summer day," says Abers, "I like to start fishing at daylight. I believe that 90 percent of your strikes come when a bass is protecting territory. It wants to kill a lure not so much as to eat it. In the morning when the water temperature is cooler, a bass will be 'wide open.'

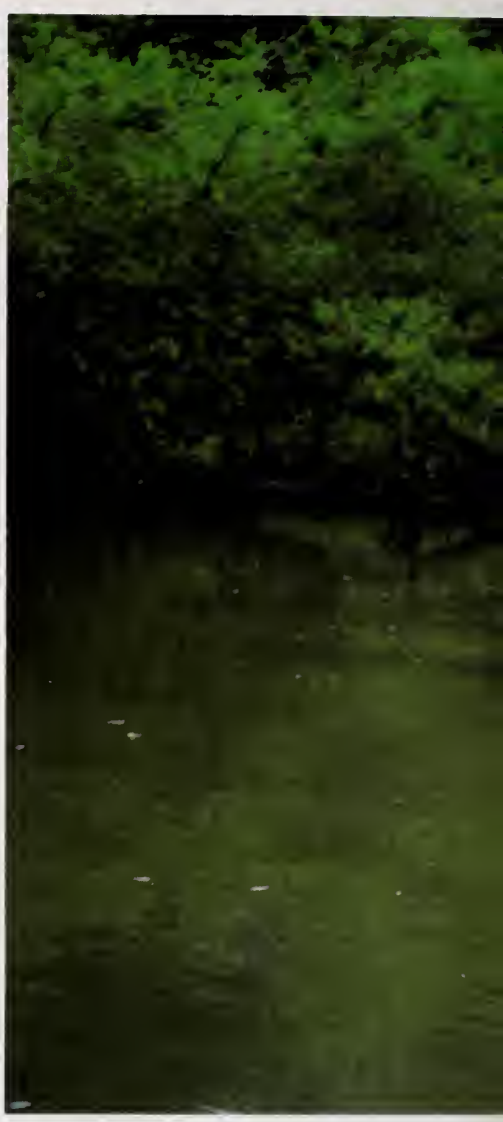
"I start off using a 1/4 ounce buzzbait with a white skirt. Buzzbaits often cause reflex strikes and that's what you want at this time of day. I work this lure quickly over rocky points, trying to cover as much area as possible and to catch one or two bass per point. I'll stick with this pattern until the sun hits the water."

In the morning, bass may be in a foot or two of water. As the sun rises higher, they begin a slow migration to deeper water. Abers often finds bigmouths at this time in depths of six to 15 feet. He then "burns" Bomber Model A crankbaits in Tennessee shad or fire tiger patterns by them.

As the day progresses, Abers again changes his approach. He seeks out structures such as long points which slope off into channels. Docks, stump, and old road beds are other places to prospect for bass.

Abers also changes lures when he works those types of structures. The guide recommends six or seven-inch black/grape plastic worms rigged Texas style. The interesting point here is that as the surface water temperature rises, a bass' metabolism slows. Late in the day, a largemouth is more likely to engulf a worm than chase a buzzbait.

Docks are especially good places to toss a fake crawler. Abers prefers wooden docks, particularly older ones. He "skips" the worm as far back under those structures as possible. If the large worms don't bring action, the guide tries something different.



Catching largemouth bass in the summer requires some specialized techniques and know-how.

"In August," says Abers, "when the water temperature is really warm, I like to use something small like the four-inch 'do nothing' worm rig. A bass by now has had all the steak he wants. Give him a dish of peanuts and maybe he'll take one."

Another place to look for hot weather largemouths is underwater islands. Abers especially likes islands which have peaks that are 18 to 20 feet beneath a lake's surface.

"One hot summer day," relates Abers, "a party and I had fished from 7:00 to 4:30 p.m. with only a couple of strikes. We then went to an underwater island and caught 20 bass in an hour and a half."

For that type of structure, the Gaston guide favors Hopkins shorty spoons. He lets the lure drop to the bottom, then he raises it a foot or two. Most strikes occur as the lure flutters back to the bottom. It's best to have a "semi-tight' line so strikes can be detected.

Of course, there are times when nothing seems to work. Abers has had those type of days just like every outdoorsman.

"Sometimes it's best to try something off the wall even during the middle of the day," says Abers. "I've saved trips before by using black jitterbugs. Reel them straight back in on a steady 'blop,' 'blop,' 'blop,' retrieve. The cadence makes bass so mad that they'll hit the jitterbug to kill it if nothing else."

Perhaps the most trying problem for the summer sportsman is a cold front. Again, Abers went to his aquarium to study bass behavior.

"During a cold front," says Abers, "I've seen little fish move off the bottom of my aquarium and stay in one

place doing absolutely nothing.

"I've even touched them with a stick," continues the Buggs guide. "They'll move just enough to get out of the way and then resume their dormant state."

For cold front bass, Abers once more favors smaller worms. The important thing, he feels, is to work them slowly and repeatedly. He further believes that bass move off structures and suspend during cold fronts. This, of course, makes them even more difficult to locate.

Anglers will only get so many strikes during this weather pattern. Lake bass, just like the one in Abers' aquarium, are not going to be moving far or fast. Thus it's important to be prepared for every hit.

One final tip for successful summer bassing involves the moon. Abers believes fish are most active when the moon is directly overhead (moon up) and directly beneath (moon down) the point on earth where an individual is located.

During those two periods, the moon's pull is strongest on the planet's surface. Abers' fishing records over the past seven years reveal that his catches have been best when the moon's gravitational pull was greatest. Many newspapers print solunar tables on their outdoor page.

If you follow Abers' advice, will all your summer bass outings be successful? Of course not. Largemouth bass are a fickle breed.

"I have caught bass in foot-deep water when the water temperature was over 90 degrees," relates Abers. "And the day before and the day after, the bass weren't in that spot at all.

"Bass are the most unpredictable creatures I know," continues the guide. "On a seasonal basis, you can depend on them a little. But on a day to day basis, you can't count on anything. The only thing you can positively say about bass is that they are unpredictable."

So, this summer, before traveling to a lake, take a few steps to make the odds more favorable. Check at tackle shops for current information, talk to other anglers, and scan topo maps for points and old road beds. If you are making your initial trip to one of Virginia's lakes, it may be best to hire a guide, especially for your first day on the water. After all, we need all the help we can get to make those uncatchable summer bass catchable. □

Bruce Ingram is the Virginia editor for Outdoor Life *magazine and a frequent contributor to* Virginia Wildlife.

1986 VWF Conservation Awards Program

Once again, the Virginia Wildlife Federation is seeking nominations for its annual conservation awards. Following is a description of the criteria for each category. All awards will be presented at the annual banquet in Richmond on October 18, 1986.

Who is Eligible: Nominees may be individuals, clubs, businesses, governmental agencies, schools or any other group involved in conservation in Virginia. Nominees may be either professional or non-professional conservationists. One nominee may be eligible for consideration in more than one category. If so, the categories should be indicated on the nomination form. All nominees will be considered for the Governor's Award. The persons nominated must be judged on their accomplishments during the past year, but if they are still actively engaged and have exhibited a continuing interest, they may be nominated on the basis of important and outstanding contributions of the recent past.

Categories:

1. *Governor's Award (State Conservationist of the Year)* For the outstanding overall conservation effort and achievement or most significant contribution to the cause of conservation or toward solution of a major conservation problem in the state during the year. This effort can be in any field of natural resource management, including enhancement and preservation of natural beauty, etc. The winner could also have won an award in a specific category, but this is not a requirement.

2. *Wildlife Conservationist of the Year* For the outstanding accomplishment during the year which has made a significant contribution to the management and restoration of wildlife.

3. *Soil Conservationist of the Year* For the outstanding soil conservation effort in the state during the year. The recipient could be a land-owner, administrator or technician who has accomplished the most in all phases of soil conservation programs within the state. Eligible areas of effort include watershed development, soil and wind erosion control programs, farm pond development, practices of farm program or other recognized and approved soil conservation measures.

4. *Water Conservationist of the Year* For the outstanding water conservation effort during the year in the state. The recipient should have made the most significant contribution to water conservation (wise use) and impact on others. Eligible areas of effort include water pollution control, wetlands preservation, estuarine conservation, saline water conservation, weather modification, etc.

5. *Forest Conservationist of the Year* For the outstanding forest conservation effort in the state during the year. The winner should have accomplished the most in forest management or conservation. Eligible areas of effort include tree planting, timber stand improvement, fire prevention and/or suppression, development of multiple-use programs on forest lands.

6. *Clean Air Conservationist of the Year* For the outstanding effort in the state during the year to the perpetuation and maintenance of a clean and wholesome atmosphere, the elimination of air pollution, development of air pollution controls and understanding and appreciation of the need for a healthy atmosphere.

7. *River Conservationist of the Year—Randy Carter Memorial Award* For outstanding efforts to protect Virginia's free-flowing streams for the recreational and environmental value, for significant contributions to the growth of the Virginia Scenic River System, or for promoting a great appreciation of our rivers among the citizens of our state.

8. *Conservation Educator of the Year* For the most outstanding effort in conservation education in the state during the year. Recipients of this award should have accomplished and demonstrated education methods directed toward the wise use or conservation of natural resources.

9. *Youth Conservationist of the Year* For the outstanding effort by a person who did not attain the age of 21 years during the year. Youth groups acting together in a conservation program are also eligible. The winner should have demonstrated ability, leadership, and accomplishment in any phase of conservation either individually or as a group effort.

10. *Legislative Conservationist of the Year* For the most outstanding conservation effort by a state legislator during the year. The competition is open only to individuals who are members of state legislatures or are members of a committee staff thereof. The winner should have made the most significant contribution on behalf of resource conservation in the state legislature during this or the previous year. Eligible areas of effort include sponsorship and/or promotion of beneficial natural resource legislation, outstanding staff work on legislative problems, efforts during interim periods by legislative council, appropriations for conservation, etc.

11. *Conservation Communications Award of the Year* For the outstanding conservation effort by a person, newspaper, magazine, radio station, or television station in the state during the year. Recipients of this award may be any recognized communications medium within the state. A person, organization, or group may be recognized which has accomplished the most in creating a public awareness of the importance of natural resource conservation.

12. *Conservation Organization of the Year* For the outstanding contribution to the conservation effort by an organization in the state during the year. Statewide

or local bonafide organizations including, but not limited to, garden clubs, civic organizations, women's clubs, etc. are eligible. Recipients should have demonstrated a keen interest on projects and programs within the state which deal with basic and serious natural resource problems and have evolved an action program stemming from that interest.

13. Hunter Education For outstanding accomplishment during the year in the field of hunter education.

How to Enter Your Nominee: Nominations should be submitted in duplicate to Virginia Wildlife Federation Conservation Awards, 4602 West Grove Ct., Virginia Beach, Va 23455. Please furnish your name as well as candidates' pertinent information which you feel should be taken into consideration. Make it completely informative but as brief and to the point as practicable. Give facts which can be readily substantiated. Please limit your nomination to two typewritten pages. Supporting documents may accompany the nominations. Nominations must be postmarked no later than midnight, August 31, 1986.

Just Off The Press

The Game Commission's publication "More Wildlife on Your Property," has just been reprinted. It provides information for both the homeowner and landowner on improving land for wildlife. In addition, the Game Commission booklet "Let's Go Freshwater Fishing in Virginia" will be available this month. It details the freshwater resources in the state, including where and when the fish are biting in our lakes, streams and rivers. Both publications are free and available by writing to the Game Commission, Education Division, P.O. Box 11104, Richmond, Virginia 23230-1104.

Letters

I read with great interest and agree with, the article by Rick Preve in the May *Virginia Wildlife* magazine.

The idea of more pine in our hardwood areas is excellent. Here in Region 7, we have 1,768,690 acres of forestland according to the 1986 Forest Survey; 25,630 acres are in white pine and hemlock; 106,320 in shortleaf and loblolly. A total of 131,950 acres in conifers leaving 1,636,740 acres in hardwoods only. You can see by this that we have over here, far less than 10% conifers.

Conifers provide shelter, some food and very good habitat for wildlife of all types.

We are in no way starting a monoculture of pines over here, but a certain amount of pine in our area would be most advantageous to general game habitat and management.

Sincerely,
Robert L. Dunn
Regional Forester
Dept. of Conservation and
Historic Resources

I am in strong disagreement with the article, "*Virginia Pines: Food for Thought and Wildlife*," in the May, 1986 issue. Moreover, I am disappointed at the decision to publish such an article in a wildlife magazine.

The very nature of an article, designed in defense of conifer production benefitting wildlife is insulting not only to the sportsmen and women of this state but to all who have any interest in our resources beyond commercial profiteering.

The author, a forester by profession and *president* of a business involved in timber consulting had more than a vested interest in writing such a story. However, even his expertise in literary propaganda fails to validate his ignorance of basic wildlife management.

The story is replete with innuendoes and half-truths. He begins with "A drive through my home woods here in western Albemarle County . . . ." Well, I'm from western Albemarle County and neither the habitat nor the logging industry there is typical or even representative of what is happening in other parts of the state. In the western piedmont section of Virginia, you're looking at mature hardwood stands of timber with a small minority of *intermittent*, isolated stands of softwoods. Take a drive along route 250 and tell me how much evidence of pines you see. He's taken an extremely unique example where interspersion and juxtaposition *may* be considered in their silvicultural practices.

But take a ride anywhere east of Interstate 95 and you tell the people paying for their hunting licenses how advantageous a pine regrowth is for game species. Here's one of the biggest shortcomings of the story; the author never put parameters on his statements. Sure, a small, properly placed clear-cut could provide some benefit to wildlife. But how big and where to put a clearing is crucial to wildlife management. A cut-over with any consideration for wildlife is unheard of in the Caroline to Sussex counties portion of the state. Mostly, they resemble barren wasteland, devoid of cover for about as far as the eye can see.

The author never put a length of time on how long a cut-over is beneficial to wildlife. Reading the story, you'd think that a pine stand is feeding quail and deer years afterward. How about putting things in perspective? Like 2 or 3 years afterwards. And then only the edges are going to be used.

I think that his true colors were shown in the first sentence of the fourth paragraph. Here's the upshot of the whole pine-tree issue, ". . . most of Virginia's forests can grow pine trees better and faster than they can grow hardwoods." What he didn't say is that by stripping our environment of mast-producing hardwoods and replanting with pines which reach a harvestable age in about 20 years, his industry real-

August Journal

izes short-term profits with minimum input or expense returned to the environment.

It is a matter of economics. Period. So don't try selling the people who read this magazine on some fairy tale addressing the significance you have for wildlife. It is not a matter of wildlife management, but lack thereof.

His very poetic final paragraph almost brought a tear to the eye. This forester, who defends pine trees so eloquently, didn't choose to be true to his story and hunt in a pine woods somewhere. The top of Yellow Mountain is a fertile, green ridgetop where hardwoods yield hickory nuts, walnuts, acorns and an understory conducive to soft mast. It's not a pine forest.

But, give them time. The timber industry will take care of that.

Mark Cooper
Hanover, Virginia

I receive *Virginia Wildlife* every month and believe me it's very interesting reading.

I am very lucky to have a great son-in-law in Maryland who sends me the magazine every month. I was interested in the June copy about catching eels. It brought back memories of over 50 years ago.

Over here they call it "blobbing," but it has more or less died out now. What we did was take long pole (usually bamboo from inside a new carpet roll), and a length of strong twine. When it got dark, we gathered big worms from under loose paving stones or old sacks which had lain around for some time, and with the aid of a length of wire, we threaded the worms on a length of thick wool, tied it in a ball and lowered it in a pool particularly full of rocks or boulders. We then laid out sheets of old newspaper on which the eels were dropped. None got away.

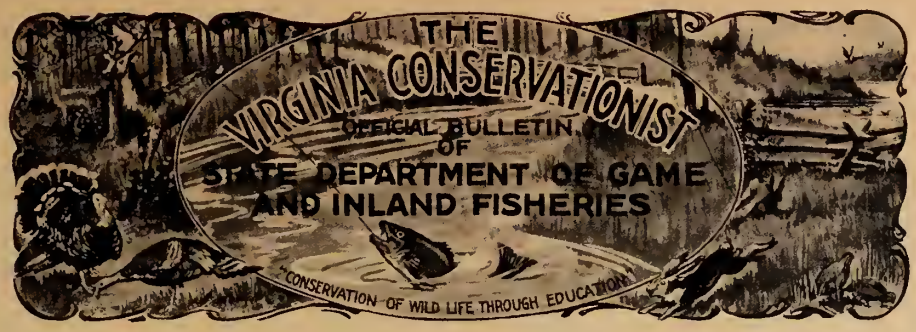
Looking forward to the July issue.

Faithfully,
Bob Earl
Stockton on Tees, England

They're Yours For The Taking—When You Subscribe To *Virginia Wildlife*

Every new subscriber to *Virginia Wildlife* from now until November 1 will receive this 19½ X 27½ inch full-color poster *and* 12 issues of the finest quality wildlife magazine around. Although our rates went up as of July 1, we are still committed to giving you your money's worth, including all the latest hunting and fishing information, along with maps and information on where-to-go in the state and in-depth looks at wildlife issues in the state. Keep informed on what's happening to wildlife in *your* state—Subscribe now! (Please allow 6-8 weeks for delivery of your poster and magazine.)

Editor's Note: This month's echo from our past is an excerpt from Vol. 2, No. 4, September-October, 1922.



Food and Cover For Game

by M.D. Hart, Secretary, Department of Game and Inland Fisheries

Some people read what students of wild life conservation write relative to this or that phase of the work and will throw the paper aside and say "there is some merit in the suggestions of that fellow but he makes his living, or a good part of it, by harping on such strings," and the effect is the same as pouring water on a duck's back as far as that reader is concerned. Some writers with so-called initiative will theorize, starting from some well known fact and spin their theories out so far that the practical man becomes disgusted. So, when the editor asked me to write something constructive relative to wild life conservation, I determined to give as far as I could a common sense view regardless of whether I ran afoul of some acknowledged theory enunciated by the so-considered masters of the science. To do this, I am going to base my opinions on what I deem fundamental facts.

I believe that we have all the laws we need; in fact, if half of them were repealed we would be no worse off. I believe our first attention now should be to providing food and cover for our wild life. Civilized man steadily encroaches upon the natural habitat of game and as he clears the forest and intensively cultivates the fields, unless a certain part of his domain is left as nature made it, wild life must suffer. Take our song and insectivorous birds, for instance; you cannot have many species about you unlesss you have the food and cover they crave. We have not, I am thankful to say, a dearth of cover in Virginia yet awhile, but food, the greatest essential, is getting scarcer and scarcer as the years roll on. How many of you are planting mulberry, wild cherry, wild grapes and seed bearing bushes—natural food for birds? Very few. How many hickory nut, scaly bark, walnut, hazelnut and other nut bearing trees do you know of being planted? How many of you are planting little patches of peas, kaffir corn, and millet for feed for the wild birds and animals?

The hunting of game birds and game animals is usually done at a time when they have their harvests, so-to-speak, and most of us imagine they stay in this fat condition the year around but it must be obvious to you that when their larder gets well drawn upon they often suffer from hunger and the scarcer the food the more the suffering. Birds and animals migrate for food. If you can find a place with plenty of food the game will be there. If you want to do real wild life conservation work, study the food conditions and devote your energies in helping nature supply the food of the wild life found in your vicinity. Take sparingly of the game birds and game animals. Measure your sport afield, not by the number killed, but by pitting your wits against theirs, killing clean every shot in still hunting and in the intelligent work of your dogs when using them.

Dr. W.T. Hornaday started shouting this warning in the New England States forty years ago and it has only been in the last ten to fifteen years that his admonitions have been heeded—almost too late to save the last remnant. The dearth of wild life is slowly creeping south along the Atlantic Coast states; yet, I am thankful that we are profiting in a measure by the misfortunes of our northern sister states. □

V·I·R·G·I·N·I·A'·S

The Opossum

by Nancy Hugo
photo by William Allen

W·I·L·D·L·I·F·E

No wonder he's smiling. The inoffensive opossum has shuffled his way into every hole in North America. He's in our corn cribs, our attics, our brush heaps, our hollow trees, our old logs, our rock piles, our vine tangles, our burrows, and our foundations. He's the most prevalent marsupial in North America—a cushy honor since he's also the only marsupial here—but abundant he is.

How come? Most marsupials like kangaroos and koalas live in isolated areas where they've had little competition from placental mammals. The primitive marsupials who bear their young almost as embryos and carry them in pouches, usually compete poorly with more advanced and aggressive placental mammals—like us. So, why have opossums succeeded so well?

They're generalists. They'll eat anything, live anywhere, tolerate everything. Unlike his relative, the koala, who dines only on eucalyptus leaves, the opossum eats insects, earthworms, snails, amphibians, reptiles, small mammals, birds, eggs, fruits, grains—anything and everything fresh or foul. He'll also live in just about any hole available, from dry uplands to low wetlands. Given a choice, he prefers open woodlands with water and a meadow nearby (an orchard would be nice, too), but a garage in suburbia will do.

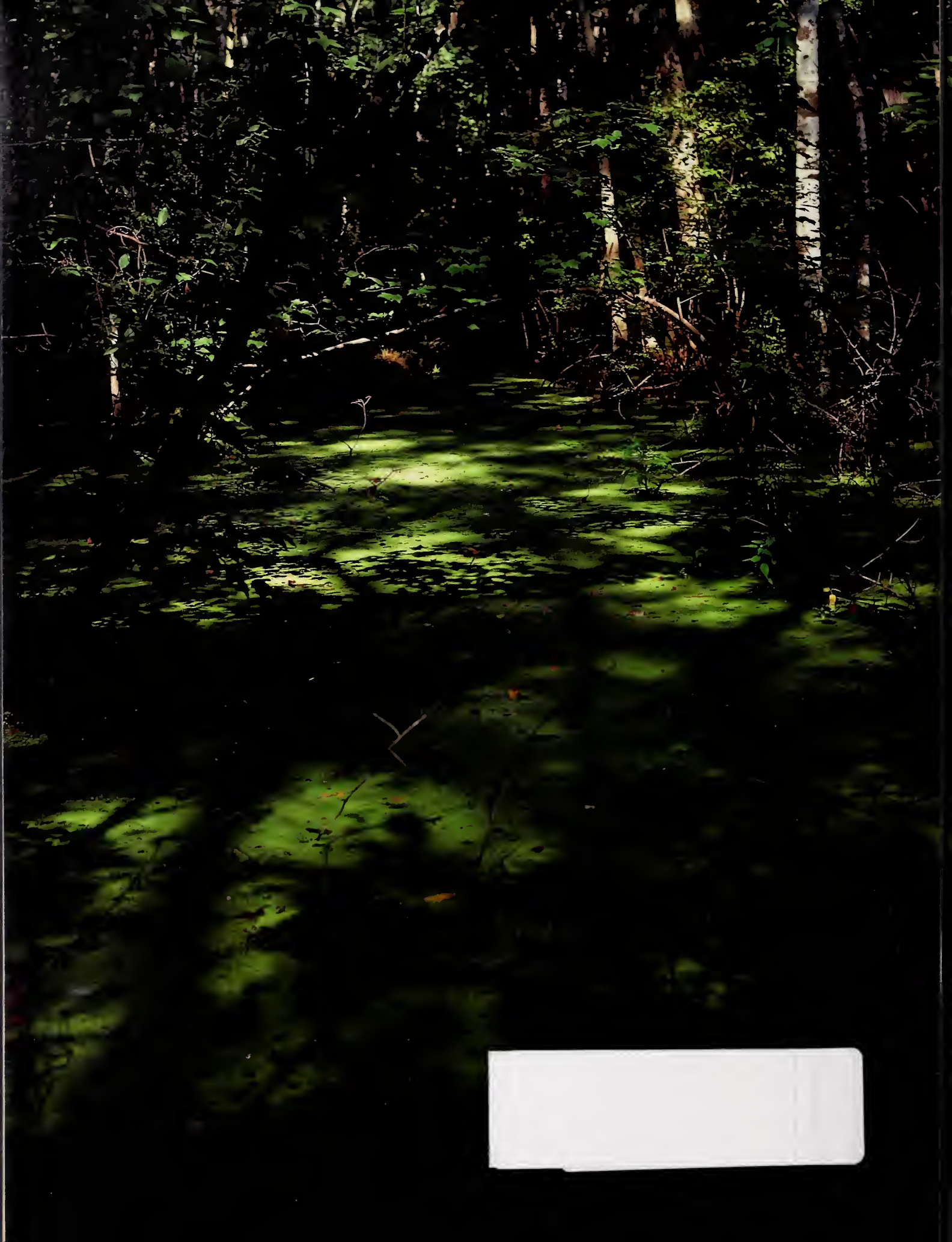
Opossums can also tolerate temperature extremes and have steadily extended their range northward, although their naked ears and nearly naked tails often suffer frostbite.

They're also prolific—a boon when you're trying to succeed. Twice a year between January and August, opossums bear litters of 6-20 young. Born only 12½ days after conception, the embryonic offspring are so tiny that 20 would fit into a teaspoon. No more than 13 (and usually no more than 8) will survive since the mother has only 13 teats, but those surviving will nurse in the mother's pouch for about 100 days. By 60 days they're a pouchful, so they often climb out and ride on the mother's back.

If you're lucky, you may see opossums in persimmons, foraging in pale moonlight. More likely, you will see them by the roadside, already battered or retreating in car lights. Either way, they are strange-looking beasts. Coarse white guard hairs and black-tipped underfur give them a grizzled appearance, and their features seem borrowed from other animals. "An Opassom," wrote Captain John Smith in 1612, "hath an head like a Swine, and a taile like a Rat, and is of the bignes of a Cat." An opossum also hath the back feet of a monkey (with opposable "thumbs") and an record number of 50 teeth.

Nocturnal, solitary, and nomadic, the opossum pokes and probes his way through the world with his tail in a downward curl. Ocassionally he carries nesting material with his tail; at other times he uses it to help him climb. Seldom do adult opossums actually hang by their tails (since the ratio of tail strength to body weight decreases as they get older), but young opossums sometimes do.

The opossum's most impressive performance, however, is "sulling" or "playing possum." When startled or alarmed, an opossum's behavior is unpredictable—he may run, hiss, growl, or even snap back at a dog, but if he thinks escape is barred, he may fall over on his side and play dead. His heart and breathing rates slow, his mouth falls open, and his tongue lolls. He's not really acting, because the entire process is involuntary. He can't respond even if his eyeballs are touched. To all appearances he is dead (and thus unappetizing to some predators), and he can stay that way for up to six hours.

How smart is the opossum? Opinions differ. Most marsupials are considered dull-witted, but researchers at the University of Georgia have found that opossums rank above dogs in learning and discrimination tests. One opossum expert even ranks opossums "next to kids and chimpanzees" in intelligence. Deciding how smart they are may depend on one's definition of intelligence, but if intelligence is defined as the ability to solve the immediate problems of living, the opossum may be a genius. □

Nancy Hugo is a freelance writer and naturalist who lives in Ashland.